

Appl. No.: 09/808,945  
Amdt. Dated: October 22, 2003  
Reply to Office Action of: 08/05/2003

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) A diffraction type lens, disposed in a luminous flux, having a wavelength selectivity; said lens being constituted by a substrate having one surface formed with a zone plate exhibiting a smaller converging action with respect to a wavelength  $\lambda_1$  of light and a greater converging action with respect to a wavelength  $\lambda_2$  of light, and the other surface formed with a zone plate exhibiting a smaller converging action with respect to said wavelength  $\lambda_2$  of light and a greater converging action with respect to said wavelength  $\lambda_1$  of light, said substrate being transparent to said wavelengths  $\lambda_1$  and  $\lambda_2$  of light, wherein each of said zone plates comprises concentric gratings each having a rectangular cross section.

2. (original) A diffraction type lens according to claim 1, wherein said diffraction type lens is shaped like a parallel plate.

3. (canceled)

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4. (original) A diffraction type lens according to claim 1, wherein said one surface formed with the zone plate has a height  $h_1$  satisfying the following conditional expressions (1) and (2), and said the other surface formed with the zone plate has a height  $h_2$  satisfying the following conditional expressions (3) and (4):

$$h_1 = L_1 \lambda_1 / (n_1 - 1) \quad (1)$$

$$h_1 = M_1 \lambda_2 / (n_2 - 1) + K_1 \lambda_2 / 2(n_2 - 1) \quad (2)$$

$$h_2 = L_2 \lambda_2 / (n_2 - 1) \quad (3)$$

$$h_2 = M_2 \lambda_1 / (n_1 - 1) + K_2 \lambda_1 / 2(n_1 - 1) \quad (4)$$

where

$\lambda_1$  and  $\lambda_2$  are the respective wavelengths of two incident light beams;

$n_1$  is the refractive index of a grating portion with respect to the wavelength  $\lambda_1$  of light;

$n_2$  is the refractive index of a grating portion with respect to the wavelength  $\lambda_2$  of light;

$L_1$  and  $L_2$  are positive integers;

$M_1$  is the maximum value among 0 and positive integers satisfying the conditional expression of  $h_1 > M_1 \lambda_2 / (n_2 - 1)$ ;

$M_2$  is the maximum value among 0 and positive integers satisfying the conditional expression of  $h_2 > M_2 \lambda_1 / (n_1 - 1)$ ; and

$K_1$  and  $K_2$  are values of at least 0.65 but not exceeding 1.35.

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5. (currently amended) [An optical pickup apparatus comprising the diffraction type lens according to claim 1,] A diffraction type lens, disposed in a luminous flux, having a wavelength selectivity;  
said lens being constituted by a substrate having one surface formed with a zone plate exhibiting a smaller converging action with respect to a wavelength  $\lambda_1$  of light and a greater converging action with respect to a wavelength  $\lambda_2$  of light, and the other surface formed with a zone plate exhibiting a smaller converging action with respect to said wavelength  $\lambda_2$  of light and a greater converging action with respect to said wavelength  $\lambda_1$  of light, said substrate being transparent to said wavelengths  $\lambda_1$  and  $\lambda_2$  of light  
wherein each of said zone plates comprises concentric gratings each having a rectangular cross section, wherein said luminous flux incident on said diffraction type lens is substantially a parallel luminous flux.

6. (original) An optical pickup apparatus according to claim 5, wherein said luminous flux is converged at a position where two kinds of optical recording media having thickness values different from each other are disposed, said wavelength  $\lambda_1$  of light being used for recording or reproducing one optical recording medium, said wavelength  $\lambda_2$  of light being used for recording or reproducing the other optical recording medium.